

**OCT 23 2007**Customer No.: 31561  
Docket No.: 12468-US-PA  
Application No.: 10/709,036

laser energy intensity is dynamically adjusted according to the sheet resistance of the amorphous silicon, which is to be converted into polysilicon.

Further as disclosed in Blanchard (col. 2, line 8 - col. 3, lines 42 and Fig. 6), after the polysilicon film 13 is finally patterned into the resistor 15, the contacts 18 and 19 are used to measuring the resistance of the resistor 15 while the laser provides heat on the polysilicon resistor 15 in adjusting the desired resistance by activating the doped dopants (drifting in or drifting out). The laser of Blanchard is not used to control the size of crystal grains in polysilicon, as did in the present invention. This is indeed in different mechanism from the present invention, which is to convert amorphous silicon into polysilicon.

Basically, Blanchard is not used for re-crystallizing the amorphous silicon for control the size of crystal grains into polysilicon.

3. In re Paynter, a resistor is also to be formed. As disclosed by Paynter at col. 3, lines 43-54; and col. 7, lines 43-53, the resistance is measured as a feedback signal. However, Paynter discloses that the energy power and operation time of laser are selected. This does not specifically disclose that the laser energy power of Paynter is changing in time according to the measured resistance, so as to control the size of crystal grains in polysilicon, as did in the present invention.

Further as disclosed in Paynter (col. 7, lines 25-41; Fig. 11), again, the dopants of boron are doped in the silicon layer 9. The laser is to activate the dopants (drifting in or drifting out). As a result, the bonds (self-alloy) with the aluminum/silicon mixture of the contacts is shown at 23. The areas of the polysilicon layer 9 not affected by the laser annealing process that traces the sensor gauges 21 remain and act as an insulator between adjacent gauges 21.

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The measured resistance includes the effect from the contact 11 and the polysilicon 9. This is not the sheet resistance of polysilicon, as recited in the present invention. Indeed, Paynter disclose process in different mechanism from the present invention for re-crystallizing amorphous silicon into polysilicon.

4. In re Elliott, Elliott is relating to UV-reactive gas plasma processing apparatus. As described in [0022] and [0072], Elliott is a moveable gas injecting module. However, this kind of movable module is in different operation from the present invention for annealing the amorphous silicon into polysilicon. In more detail, as stated in [0020] of Elliott, the UV energy density is used alone with the reaction gas being used. In [0072] and Figs. 11-12 of Elliott, the plasma scanning reactor 100 uses the UV beam 108 from the module 106 to produce the gas reaction zone 122 on the copper. When the gas, such as oxygen, is provided from the gas inject module 110 via the nozzle 112 on the copper of wafer, the oxide layer is formed on surface of the copper film. It should be noted that the UV beam is to produce the gas reaction zone on the surface of the wafer, so as to form an oxide layer. Indeed, Elliott is in different operation mechanism from the present invention.

The UV beam 108 from the module 106 is not used for annealing the amorphous silicon to polysilicon. Further, the energy density of UV beam is not varying according to the measured sheet resistance.

Even if Elliott is in combination with Blanchard or Paynter, Elliott still at least does not provide the missing features as discussed above.

For at least the foregoing reasons, Applicants respectfully submit that independent claim 1

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patently defines over the prior art references, and should be allowed. For at least the same reasons, dependent claims 2-7 patently define over the prior art references as well.

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**CONCLUSION**

For at least the foregoing reasons, it is believed that all the pending claims 1-7 of the invention patently define over the prior art and are in proper condition for allowance. If the Examiner believes that a telephone conference would expedite the examination of the above-identified patent application, the Examiner is invited to call the undersigned.

Respectfully submitted,

Date :

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